



Research Centre:	DCU Water Institute
Post title:	Post-doctoral researcher (Optical sensor development)
Level on Framework:	Level 1
Post duration:	Fixed Term Contract up to 19 Months

Research Career framework

As part of this role the researcher will be required to participate in the [DCU Research Career Framework](#). This framework is designed to provide significant professional development opportunities to researchers and offer the best opportunities in terms of a wider career path. DCU has a strong track record in attracting both Irish and European Union research funding under Horizon 2020 (and all previous Framework Programmes), Marie Curie Actions and Erasmus. We offer a dynamic and internationally-focused environment in which to advance your academic career.

Background & Role Profile

The post-doctoral researcher will join a multidisciplinary team working on the development of Advanced Environmental Decision Support Systems for Coastal Areas using distributed, autonomous, real-time sensor systems. The project's goal is the development of low cost optical sensing probes for the detection of pollution events in the marine environment. The post-doctoral researcher will work closely with the team members in the Water Institute (engineer and environmental scientist) but also with the industrial partner to integrate the data analytics and to validate the decision support tool. The post-doctoral researcher will be responsible for the design,

development and testing of a new optical head for the low cost sensor and for setting-up a framework for the characterization of optical components.

Duties and Responsibilities:

- To design, develop and test the optical head of the low cost sensor
- To design and set-up a framework for the characterisation and testing of different optical components (LED, photodiodes, lasers etc.)
- To create technology process flows and drive process and device optimization.
- To provide assistance in conducting the following research activities, including planning, organising, conducting, and communicating research studies within the overall scope of the research project.
- To carry out administrative work to support the program of research and ensure all project deliverables and milestones are achieved in a timely manner.
- To work closely with industry/research partners (existing and planned) and other stake holders.
- Undertaking other tasks as defined by the project leaders

Qualifications and Experience:

Essential criteria

The post will require a researcher who holds a PhD in a relevant field such as physics, engineering, photonics, optoelectronics, optical sensors or a related discipline.

Desirable Criteria

- Broad experience in optical spectroscopy
- Experience in programming and communication with laboratory instruments (C++, MatLab, LabView or similar) and specific optical design software.
- Good analytical skills and computer skills.
- Evidence of excellent organizational and communication skills.
- Evidence of excellent time management skills.
- Experience with sensor systems for water monitoring is an asset.
- High levels of initiative, self-management, achievement-orientation, and motivation are encouraged.

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline.

Understanding the Research Environment – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications.

Communicating Research – Demonstrates the ability to convey their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students.

Managing & Leadership skills - Demonstrates the potential to manage a research project including the supervision of undergraduate students.

Mandatory Training

Post holders will be required to undertake the following mandatory training: Orientation, GDPR, and Compliance. Other training may need to be undertaken when required.